

**Decisions on a Band Plan for Broadband Radio Service (BRS)
and Consultation on a Policy and Technical Framework to
License Spectrum in the Band 2500-2690 MHz**

Canada Gazette Notice SMSE-005-11

**Response of Barrett Xplore Inc. and
Barrett Broadband Networks Inc.**

April 19, 2011

Executive Summary

1. Barrett Xplore Inc. and Barrett Broadband Networks Inc. (collectively, “Barrett”) are pleased to provide the following comments in response to the Department’s paper, *Decisions on a Band Plan for Broadband Radio Service (BRS) and Consultation on a Policy and Technical Framework to License Spectrum in the Band 2500-2690 MHz*, as announced in Canada Gazette Notice No. SMSE-005-11. As Canada’s largest rural broadband provider, deploying fixed wireless and satellite broadband services across all regions of Canada, Barrett welcomes this opportunity to comment on the development of a framework for the licensing of spectrum in the 2500 MHz band.
2. In building its broadband business over the last five years, Barrett has used a combination of terrestrial and satellite technologies to provide an affordable broadband Internet service to its customers in rural markets. Given the rapidly growing demand for broadband connectivity, Barrett has found that fixed wireless solutions can be quite cost-effective for providing broadband services to rural residential, business and public sector customers.
3. The broad perception of this consultation is that the focus is on the provision of Canadian mobile communications services. The fact is there remains a gap in the availability of affordable broadband services between rural and urban areas in large part driven by the inaccessibility of wireless spectrum. Barrett believes that the 2500

MHz and 700 MHz bands are part of the spectrum solution to narrow, and inevitably eliminate, the digital divide of affordable broadband between urban and rural Canada.

4. While broadband and mobile (and “nomadic” – partly mobile) are converging, there will be limitations over the next several years in the ability of wireless mobile technologies to deliver the kind of bandwidth that urban residential customers currently enjoy via cable or DSL fixed wire line technologies. Fixed wireless services using 2500 MHz and 700 MHz spectrum represent very real immediate alternatives to ensure rural Canadians obtain truly robust broadband services. Thus, Barrett maintains that at least in rural areas, the 2500 MHz spectrum could well be more valuable to provide fixed broadband than mobile service. That said, our proposal does not limit the ability to offer mobile services and therefore preserves value.
5. Barrett has managed to acquire some spectrum from select holders as the basis for deploying fixed wireless broadband service, primarily in the higher 3500 MHz band. However, Barrett has been unable to purchase the necessary spectrum to serve all targeted rural areas, having no success as of yet with incumbent providers who hold an abundance of spectrum in these areas. While we have tried to negotiate with the incumbents for rural spectrum, we have not been able to complete any transaction to date – even in areas where the incumbent has not deployed service to rural areas.
6. The Department’s stipulations of service obligations can be accommodated without actually providing service to rural areas, many of which can be quite close to urban areas. Thus, we are aware of many areas where there is a lack of robust broadband capability, where we have interest in deploying and yet we cannot acquire any spectrum from existing incumbent holders. While we are quite interested in participating in the spectrum auction for the 700 MHz and 2500 MHz bands, in order to acquire more spectrum the auction rules need to be designed in a way that supports the objective of providing broadband service to rural areas in Canada.

2500 MHz and the digital divide

7. Barrett commends the Department's and federal government's ongoing commitment to developing policies designed to promote the availability of affordable broadband services in rural and remote areas of Canada and closing the digital divide.
8. While the propagation characteristics of 700 MHz make it ideal for expanding wireless *coverage* across large geographic areas, particularly rural areas of Canada, there is an availability scarcity. This makes 2500 MHz spectrum valuable to Canadian wireless carriers seeking to increase their spectrum *capacity*, with a lower cost per bit to meet exploding bandwidth demand. The international allocation of 2500 MHz to broadband communications services and the related global equipment standards means that carrier-infrastructure and consumer-device equipment are available at a relatively lower cost compared to many other potential bands.
9. One of the main challenges of deploying broadband services is the total cost of deployment – both to carriers and consumers. As already noted by the Department, in order for wireless carriers operating in the 2500 MHz band to accommodate the spectrum demand brought on by broadband wireless applications, the licensing of the 2500 MHz spectrum should support: both economies of scale and greater equipment availability; and the deployment of systems with reduced capital and operational costs.¹ These points hold equally and especially true for rural broadband deployment.
10. Barrett's position in the 700 MHz submission is complementary, and essentially consistent with, this 2500 MHz submission. The digital divide can only be resolved if rural-focused ISPs can gain access to spectrum capacity. Rural-focused ISPs can only gain access to spectrum in rural areas when the price of rural spectrum is decoupled from the valuation of urban spectrum. Furthermore, rural-focused ISPs can only acquire lower-cost rural spectrum if the Department implements pro-competitive measures that limit large incumbents from obtaining this lower-cost rural spectrum.

¹ Industry Canada, *Decisions on a Band Plan for Broadband Radio Service (BRS) and Consultation on a Policy and Technical Framework to License Spectrum in the Band 2500-2690 MHz.*, SMSE-005-11, p. 3.

11. That being said, it is important to note that 2500 MHz spectrum is not a substitute for 700 MHz spectrum. In fact, Barrett believes they are very complementary. The 700 MHz spectrum is ideal for rural-focused ISPs requirement to expand their *coverage* in an economical manner across large, rugged geographic areas. The 2500 MHz plays an important role in permitting rural-focused ISPs to build the bandwidth *capacity* needed to accommodate the burgeoning demand for broadband services.

Market-based solution to the digital divide

12. The Canadian telecommunications industry tends to view spectrum as a resource primarily for mobile communications services – voice and data. However, this view is largely a reflection of the situation in urban telecommunications markets. In urban markets, wireline technologies such as cable, digital subscriber line (DSL) and fibre-optic cable address households' and businesses' demand for fixed broadband service. This delivery infrastructure leaves spectrum free to meet the urban-area demand for mobile communications services. In rural areas, however, where wireline infrastructure is not as prevalent, spectrum is the only route to meeting households' and businesses' demand for both fixed and mobile broadband services.

13. For that reason, Barrett argues that the Department should treat both 700 MHz and 2500 MHz spectrum in rural areas differently from urban areas – a more holistic view of wireless broadband use. Of course, Barrett recognizes that the Department is open to discussion on this point, as it has expressly sought to address rural Canada's communications needs. In urban areas, spectrum allocation and assignment should optimize the performance of mobile networks. In rural areas, however, spectrum allocation and assignment must address the growing demand for broadband services – whether delivered by mobile or fixed wireless networks. Barrett argues that the Department can only truly address the digital divide by developing and implementing policies that reflect this balance.

14. Barrett argues for an effective and direct way for the Department to recognize the need for balance, and then take steps to address and eliminate the digital divide. The best approach is to attract investment from Internet service providers (ISPs)

with proven track records in rural areas by allowing them to obtain rural spectrum at prices that reflect the rural market densities, and are not distorted by the value of spectrum in adjacent urban markets. In fact, this approach would obviate any need to subsidize service in rural markets as there are service providers, like Barrett, who are ready to deliver broadband services to those markets at urban equivalent prices. Barrett notes that such an approach is consistent with the Department's policy of promoting competition and advanced broadband services. Furthermore, the recommended approach will not hinder the objective of providing more spectrum for serving the mobile needs of Canadians in urban and rural areas alike.

Tier 4 and rural unbundling

15. Barrett believes that the most effective and direct way to achieve this outcome of better service to rural Canada is for the Department to adopt Tier 4 service areas and unbundle the rural service areas from urban service areas ("rural unbundling"). A definition of what constitutes a "rural service area" has been developed by Barrett in this reply to help clarify the appropriate rural policy. It provides the Department with a rigorous, yet simple, method for the classification of relevant service areas as rural. It is a definition that is anchored in precedent and sound public policy. This approach was put forward in Barrett's 700 MHz consultation submission and is equally valid here.

Pro-competitive measures

16. In order to ensure that spectrum is made available to rural focused ISPs, Barrett argues that the Department should also implement certain pro-competitive provisions (i.e., a set-aside and/or spectrum cap). These provisions would be designed to restrict large incumbent carriers who already control a substantial amount of spectrum in rural Canada, from bidding for 2500 MHz spectrum in rural areas. Much of the incumbent spectrum in rural areas is either under-used or, in some cases, even unused. The objective of these pro-competitive provisions would be to help foster the immediate deployment of wireless broadband services in rural

areas, delivered by rural-focused service providers who offer services designed to appeal to the rural markets.

- a. In order to rebalance the wireless broadband competitive landscape Barrett is recommending an **in-auction 30 MHz spectrum cap** applicable to all 2500 MHz spectrum in rural and urban areas. This in-auction spectrum cap would limit the total amount of 2500 MHz spectrum that any bidder could acquire during the auction, without affecting holders of existing 2500 MHz.
 - b. For rural service areas, Barrett recommends that the Department also implements **a rural set aside**. This rural set aside would **exclude entities and their affiliates that already hold 2500 MHz spectrum** in a given geographic area from bidding on rural 2500 MHz spectrum in that area.
17. These two pro-competitive measures will ensure that the incumbents do not simply take even more 2500 MHz spectrum and completely forestall their competitors from acquiring the capacity they need to grow their businesses.
 18. As argued in Barrett's 700 MHz consultation submission, it believes that the Department must adopt rural rollout obligations to prevent winning bidders from sitting on rural spectrum as the large incumbent service providers have done in many cases. Barrett suggests that one way to improve the effectiveness of any rural rollout obligation is to adopt of an enhanced version of RP-19 as the process for resolving situations where licensees cannot meet their rural rollout obligations.
 19. Barrett believes that the combination of Tier 4 *unbundling*, 30 MHz in-auction spectrum cap (applicable to the 2500 MHz band), a rural set aside, and clear rural rollout obligations combined with an enhanced version of RP-19 represents the most effective well-rounded way of bridging the digital divide without infringing on the objective of alleviating the need for more mobile spectrum.
 20. Our position in this submission regarding 2500 MHz is consistent with our earlier submission regarding the 700 MHz band. To provide effective competition and stimulate improved broadband service to rural subscribers, we need the *coverage* that

the 700 MHz band provides, and the *capacity* enabled by 2500 MHz to make the business case work for serving rural Canada.

Introduction

21. Barrett Xplore Inc. and Barrett Broadband Networks Inc. (collectively, “Barrett”) are pleased to provide the following comments in response to the Department’s paper, *Decisions on a Band Plan for Broadband Radio Service (BRS) and Consultation on a Policy and Technical Framework to License Spectrum in the Band 2500-2690 MHz*, as announced in Canada Gazette Notice No. SMSE-005-11 (The “2500MHz Paper”). As Canada’s largest rural broadband provider, deploying fixed wireless and satellite broadband services across all regions of Canada, Barrett welcomes this opportunity to comment on the development of a framework for the licensing of spectrum in the 2500 MHz band.
22. In the 2500 MHz consultation paper, the Department has outlined its intention to initiate a licensing process using an auction to select entities to which authorizations may be issued to use the available spectrum. Barrett believes that the licensing of spectrum in the 2500 MHz band provides the Department with an ideal opportunity to address the availability of affordable broadband Internet services for rural Canadians. As such, many of Barrett’s comments focus on the policies and measures that the Department may pursue to foster market entry, sustainable competition, robust service offerings and the accelerated deployment of broadband Internet services in rural areas of Canada that could eliminate the rural/urban digital divide, once and for all.
23. This submission is focused on providing comments and proposing several alternatives that enable the lower population density areas of Canada to access broadband services of similar capacity and prices as urban residents and businesses. In doing so, it puts forward, among other things, the case for a broader perspective than just 2500 MHz (or even 700 MHz + 2500 MHz) for mobile wireless broadband communications. Barrett believes it is necessary to review spectrum usage in rural and remote areas in a broader context for all forms of broadband communications. This includes, but is not limited to, mobile broadband, keeping in mind that the original purpose of this spectrum, was for fixed and broadcasting purposes.

Background

24. Barrett, headquartered in Woodstock, New Brunswick, operates Xplornet Internet Services, Canada's largest rural broadband provider, with customers and dealers in every province and territory. Barrett aims to bridge the urban/rural digital divide by ensuring that every Canadian, regardless of where they live, work or play has access to broadband, thereby enabling them to compete effectively in the global economy and gain access to essential government and educational services.
25. Barrett's 450 dedicated employees are committed to providing an excellent customer experience for its subscriber base, with reliable, bilingual service available nationwide 24 hours per day, 7 days per week, 365 days per year. Combined with a nationwide dealer and service installation network of over 3,000 professionals, Barrett provides local sales and support throughout Canada.
26. Barrett is the only operator that offers broadband coverage to 100% of Canada's population by taking a best-fit technology approach. Barrett deploys a hybrid service delivery solution combining the inherent strengths of wireless and satellite technology to serve Canada's lower density areas. Through a strategy of organic growth, so far, Barrett has built a wireless network infrastructure of over 600 broadcast towers, serving rural Canadians in six provinces – New Brunswick, Quebec, Ontario, Manitoba, Alberta and British Columbia – and a complementary satellite network overlay to reach 100% of Canada's population.
27. To continue to provide rural Canadians with state-of-the-art broadband services, Barrett continually seeks to implement new proven communications technologies. In October 2010 Barrett announced that it had commenced a next-generation 4G network for rural Canadians, starting with terrestrial fixed wireless, and quickly followed by a new satellite network. This is the first commercial deployment announced of a true national 4G network in Canada. For rural Canadians, the deployment of this technology means better access to faster, more affordable broadband. And this state of the art technology is coming to rural Canada first.

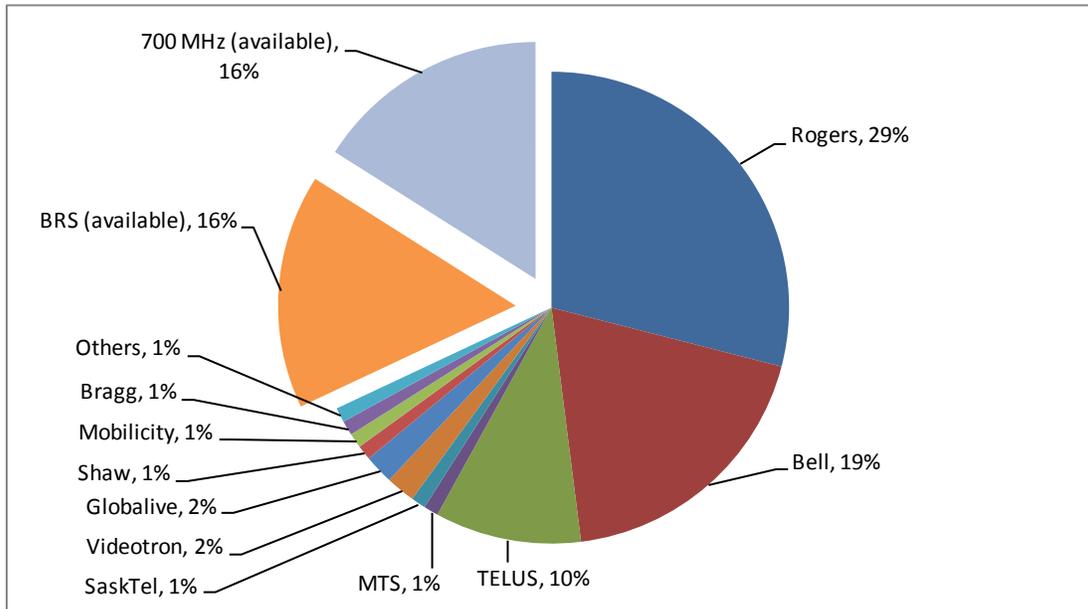
28. The 4G network will have both terrestrial and satellite components. The terrestrial wireless network, which will be comprised of roughly 1,200 towers, will be capable of speeds over 40Mbps improving to over 100Mbps within the next year. While speed is important, the key to a great experience is more bandwidth, and the new network will provide the capacity for more robust service packages, ranging from 3x to 10x the capacity of today's HSPA. The terrestrial 4G network will initially be based on WiMAX, and is software-upgradeable to the future WiMAX protocol or to LTE, - whichever will offer rural customers a better experience. Barrett's investment in the new terrestrial wireless network is planned to be approximately \$150 million.
29. The terrestrial wireless network will be complemented by a new 4G satellite network, which will be based on new High-Throughput Satellite (HTS) architecture, starting with the first satellite, Viasat-1, scheduled to launch in 2011, followed by a second satellite, Hughes Jupiter, in 2012. These satellites will allow Barrett to provide robust speeds of up to 25Mbps (downloads) and 10Mbps (uploads). In combination, the 4G networks will mean that by 2012, every rural Canadian will have access to affordable, robust broadband.
30. Construction of the new terrestrial 4G wireless network started this past fall with the first region of the network and customers coming online in January 2011. The 4G satellite network will see its first customers coming online in late 2011.
31. Barrett continues to look forward to being one of rural Canada's leading broadband services companies and working with the Department to develop a policy and licensing framework that is designed to directly meet the growing broadband communications needs of rural Canadians.
32. Since 1985, the Department has licensed over 270 MHz of spectrum for wireless mobile communications, starting with the 800 MHz Cellular band (50 MHz), the 1900 MHz personal communications services (PCS) band (130 MHz), and recently the 1700/2100 MHz Advanced Wireless Services (AWS) band (90 MHz). In licensing these various blocks of spectrum, the Department has adopted various measures designed to advance important public policy objectives. These objectives have

included the promotion of competition in wireless communications, the enabling of advanced communications services to most regions of Canada (including rural and remote areas), the provision of a diversity of service offerings to consumers and business, and the encouragement of facilities-based competition. In the evolution of wireless, the Department has recognized the criticality of wireless communications and spectrum resources to advance the modernization of the Canadian telecommunications system and has taken every opportunity to foster these objectives in the licensing processes for the Cellular, PCS and AWS spectrum.

33. Canada has come to a critical crossroads; the licensing of the 700 MHz and 2500 MHz bands will virtually double the spectrum resources for broadband wireless communications with over 200 MHz of new spectrum in certain regions of Canada (up to 84 MHz in the 700 MHz band and 125 MHz in the 2500 MHz band). It is a critical timeline for the federal government to address important public policy issues, which will set the course of broadband wireless communications in Canada for the next decade. By around 2013, the Canadian wireless industry will have approximately 540 MHz of prime broadband spectrum at its disposal to unleash the full promise and potential of the digital economy for all Canadians. The net public benefit expected from these public spectrum resources should be available to all Canadians. Canadians living and working in large urban centres or in less-densely populated rural areas should enjoy a reasonable diversity of advanced broadband services and network facilities to meet their social, economic and cultural needs.
34. With respect to the 2500 MHz band, the Department's decision is that Canada will adopt a world band plan, whereby existing radio installations will have to migrate to the new plan, and existing licensees will have to return approximately one-third of their multipoint communications services (MCS) and multipoint distribution services (MDS) spectrum to be auctioned. As a result, some of the incumbent wireless operators will retain significant spectrum (up to two-thirds of the 190 MHz in the 2500 MHz) for Broadband Radio Service (BRS), including high mobility.

35. The Department has outlined the various spectrum holdings and has taken into account the additional 2500 MHz holdings that will be available without a new licensing process to wireless incumbents in the overall spectrum-holding statistics reported in 700 MHz Paper (as reproduced in Exhibit 1).

Exhibit 1 Summary of holdings and available Cellular, PCS, AWS, BRS and 700 MHz spectrum



Source: Industry Canada, SMSE-018-10, p. 10
 Note: 700 MHz band assumes 84 MHz of spectrum available.

36. The same scenarios are being repeated in the development of fixed broadband spectrum in the 2300 MHz wireless communications services (WCS) and 3500 MHz fixed wireless access (FWA) bands, where significant spectrum holdings are available to a few licensees. These licences are often the same operators having similarly large spectrum holdings in the Cellular, PCS and AWS spectrum. Through vertical integration within the Canadian telecommunications industry, some of these dominant holders of spectrum also have extensive wireline broadband facilities (ADSL, cable modem) which extend to the most lucrative segments of the rural market. However, spectrum-based facilities represent for many situations the only practical means of bringing advanced broadband communications services to low-density service areas, not just for mobile use but fixed broadband-based services as well. Lack of access to

spectrum, therefore, is a critical barrier to entry for entrepreneurs who wish to develop radio-based facilities in these low-density areas.

37. From the CRTC *Communications Monitoring Report 2010* (the “CMR 2010”) on the performance of broadband services in Canada for both wireline and wireless facility availability, it is evident that the wireline ADSL and cable facilities are well entrenched as the dominant access technologies. However, it is also evident that there exists a great disparity between access facilities available and broadband subscription rates in urban and rural areas in some of the provinces. Barrett’s position is that it is not for a lack of demand, but a lack of spectrum availability. Again, similar to broadband mobile spectrum, a significant amount of unused fixed wireless access (FWA) (175 MHz) and wireless communications services (WCS) (30 MHz) spectrum has been licensed since the early 2000s but has not yet been deployed, particularly in low-density areas of the licence holdings. It will likely stay idle in the foreseeable future for much the same reason as mobile wireless spectrum: these areas are either non-core to the licence holder’s business base, or as a means to frustrate wireless broadband competition. Barrett submits that it is relevant to this consultation to point out that fixed broadband spectrum is not effectively used in rural areas.
38. Against that background, the Department has made some effort to extend the diversity of advanced wireless service to rural Canada, such as the recent *Broadband Canada: Connecting Rural Canadians* program, but the provisions put in place have not met the objective of making readily available spectrum for rural development. The definition of spectrum-area blocks which encompasses large geographic service areas (i.e., Tiers 1-3) may be conducive to hold spectrum for large areas, but not for operators wishing to serve the challenging technical and economic aspects of low density areas, such as rural communities. Even the smallest tier (Tier 4) blocks are not optimally designed as many urban centric licences are too large in area, capturing large amounts of low-density rural communities, to leverage the spectrum to solve rural challenges and problems in an economic way.

39. The Department has a unique opportunity to change the conditions that would encourage service to rural areas, as it is proceeding to open over 200 MHz of new broadband wireless spectrum. This doubling of spectrum resources from 270 MHz to over 500 MHz presents the opportunity to redress the digital divide and expand rural broadband services. It is well documented that there is very little deployment of the existing licensed spectrum in most rural regions of Canada (Cellular, PCS and AWS bands and similarly in the 2300 MHz WCS and 3500 MHz FWA bands), and that suitable policy provisions should be established that redress broadband rural communication by providing practical access to spectrum in suitable areas and at compensatory prices to the population density. The urban-centric economy of needing the urban market to serve the rural market has not helped alleviate Canada's digital divide over the past 25 years or so. Perhaps historically there was insufficient demand or viable business alternatives brought forth that would warrant a different approach. Clearly that is no longer the case. Some of the spectrum must be earmarked for rural broadband, and the forthcoming auction presents an opportunity to change the current dynamics of spectrum ownership and use.

1. Block Sizes

1-1. Should the block sizes be uniform in size?

(a) If a uniform size is preferred, what size should be considered?

(b) If a mix of block sizes is preferred, what combinations and arrangements should be considered?

Provide comments separately for paired and unpaired spectrum blocks.

40. In Region A, 50+50 MHz of paired spectrum and 25 MHz of unpaired spectrum are available for the auction; in Region B, 30+30 MHz of paired spectrum and no unpaired spectrum is available for auction; in Region C (Manitoba) 50+50 MHz of paired spectrum and 25 MHz of unpaired spectrum, including restricted band, are available for auction (in different frequency bands than Region A).

41. New networks by Broadband Radio Service (BRS) spectrum licence holders can deploy multiple technology options, including FDD-based Long-Term Evolution (LTE), TDD-based LTE, or TDD-based WiMax. These technologies can deliver superior performance and much better efficiency when operating with wider channels of 20 MHz or more. At the same time these same technologies can operate more traditional sized channels in the 2500MHz band, accommodating 5 MHz channel sizes. The 2500 MHz band offers 190 MHz of total spectrum, which is a significant amount of spectrum that can take advantage of new technology capabilities. However, much of the spectrum is no longer available, as it has been acquired by the incumbents. This ownership profile has reduced the amount of available spectrum, and with it some of the ability to reach optimal spectral efficiencies and achieve competition objectives. For example, in the case of Region B there is only 30+30 MHz of paired spectrum, limiting the number potential suitors to create a healthy competitive environment in rural areas, irrespective of channel sizing.

42. Furthermore, as the Department has recognized, different bidders will have different spectrum requirements. Block sizes need to accommodate these various plans, offering some degree of business plan flexibility.

43. In setting the block sizes, Barrett recognizes that the Department must balance the objective of spectral efficiency with business flexibility and reasonable access for all. While block sizes of 5 + 5 MHz would be entirely suitable to accommodate mobile applications, it is too small to accommodate the higher bandwidth fixed broadband applications. As such, Barrett recommends that the Department adopt a uniform block size of 10 MHz: 10 + 10 MHz paired and 10 MHz unpaired blocks, where applicable.

1-2. In the specific geographic regions discussed above and shown in Appendix A, which block size option(s) should be adopted and why is this option(s) preferred over the other options? Should the combinations and arrangements of block sizes be the same or different in different areas? Provide supporting rationale.

Provide comments separately for paired and unpaired spectrum blocks.

44. As noted above Barrett is recommending uniform block sizes for both paired and unpaired blocks. However, given the difference in available paired and unpaired spectrum by Region it does vary the number of potential, successful bidders by Region, by band type.

2. Tier Sizes for BRS Spectrum

2-1. The Department seeks comments on whether the licensing of 2500 MHz spectrum should be based on uniform tier sizes across all spectrum blocks, or on a mixture of tier sizes.

Provide supporting arguments for your responses to the above questions.

45. Barrett believes that the licensing of 2500 MHz spectrum should be based on uniform tier sizes across all blocks and geographic regions.

46. As instructed by the Department in the consultation, being a company focused on rural broadband, Barrett will not provide further comment for this section as it pertains to tier sizes as they relate to the promotion of service deployment in remote and rural areas. Please see Section 4 for our position on Tier sizing.

- 2-2. Based on your answer above, if a uniform tier size is preferred, what tier size should be adopted? If a mixture of tiers is preferred, please indicate the proposed tier(s) for each spectrum block.**

Provide supporting arguments for your responses to the above questions.

47. Barrett believes that all 2500 MHz spectrum should be licensed on the basis of Tier 4.
48. Barrett also believes that the Tier 4 service areas be unbundled into urban and rural services (“rural unbundling”). Barrett provides further description and discussion of rural unbundling in Section 4.

3. Promoting Competition

- 3-1. If the Department determines that there is a need for measures to promote competition in the wireless services market, which of the above mechanisms would be most appropriate in the 2500 MHz band and why should this mechanism be considered over the other?**

Comments should also indicate if further restrictions should apply.

In light of your response above, and recognizing that pending decisions on block sizes and tier sizes could influence your response:

49. Barrett believes that an *in-auction* spectrum cap applied to 2500 MHz spectrum can be effective in promoting competition in the Canadian wireless market.
50. Over the years, the Department has introduced various measures to foster wireless competition, a diversity of service providers and offerings, and coverage to all regions. These measures have included the use of a spectrum cap to prevent spectrum hoardings, a spectrum set-aside to encourage new entrants, and minimum roll-out requirements to encourage reasonable coverage and usage of spectrum. To facilitate service coverage for new entrants’ subscribers, the Department has introduced mandatory roaming provisions. As a last measure to bring cellular services to unserved areas, the Department introduced flexible rules for aggregating/dividing spectrum so as to foster sub-leasing of unused spectrum to third parties.

51. Although these measures have had an impact in urban development these approaches have had modest, and sometimes temporary, benefits in advancing rural competition. Although they have opened up the market for new urban entrants, stimulated competitive rivalry in pricing and service offerings among the incumbents and new entrants in urban areas, these measures have had little impact in bringing a diversity of services to many Canadians and businesses residing in rural areas.
52. The failure of spectrum resources to support a diversity of wireless networks and advanced broadband is well illustrated in the 2010 CRTC *Communication Monitoring Report* (CMR 2010). Section 5.5 of the 2010 CMR reports that the wireless network covers approximately 20% of Canada's geography and 99% of the population (approximately to 34 million inhabitants).² Also, the CMR 2010 indicates that advanced wireless networks supporting smartphones and turbo sticks are available to 96% of Canadians.³ However, with wireless penetration of 70.9% in 2009, Canada was the lowest among eight leading Western economies.⁴
53. Canada's relatively low penetration rate corresponds with its relatively high pricing. In order to try and get around the difficulties inherent in ARPU (average revenue per user) comparisons, the Organization for Economic Cooperation and Development (OECD) has developed a usage-level basket methodology that compares the price paid for a consistent package of services at 3 usage levels (Low, Medium and High).⁵ As illustrated in Exhibit 2, when adjusted for usage-levels, Canadian wireless service prices were significantly higher in the low- and medium-usage category, but were slightly lower in the high-usage category when compared to the seven other countries profiled.

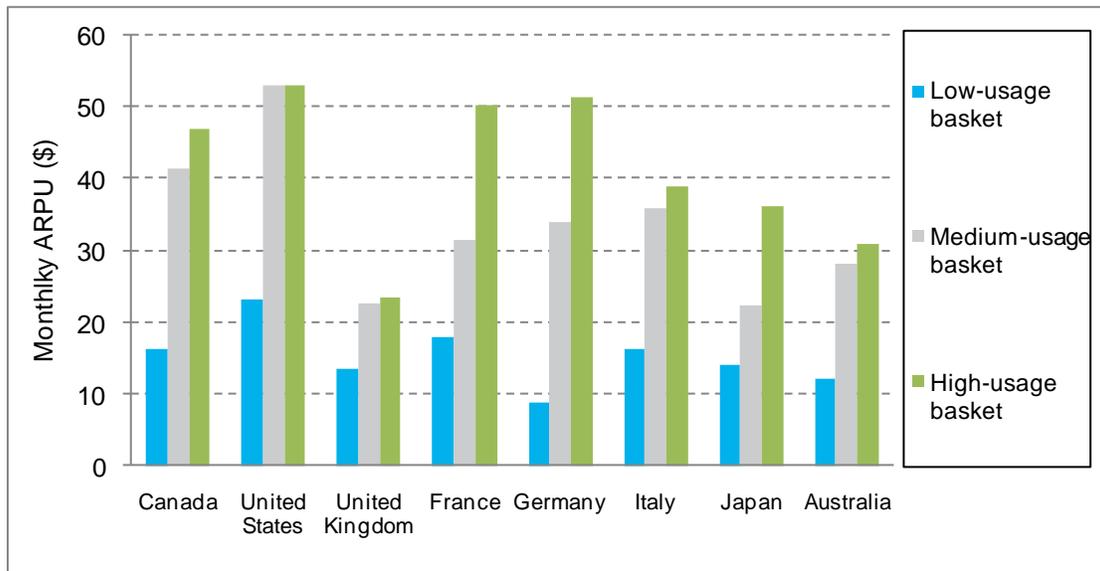
² CRTC, *Communications Monitoring Report 2010*, p. 153.

³ CRTC, *Communications Monitoring Report 2010*, p. 153.

⁴ CRTC, *Communications Monitoring Report 2010*, p. 160.

⁵ According to the OECD basket methodology a low-use basket includes 360 voice calls, 396 SMS messages and 8 MMS over one year. A medium-use basket includes 780 voice calls, 600 SMS and 8 MMS over one year. A high-use basket includes 1680 voice calls, 660 SMS and 12 MMS over one year. The monthly rates were calculated by dividing the average annual price by 12. Prices were adjusted for exchange rate and purchasing power parity.

Exhibit 2 International comparison of mobile communications costs, 2008



Source: Nordicity calculations based on data for 2008 from OECD, *Communications Outlook 2009*

54. Also, statistics in CMR 2010 show that there was very little, if any, wholesale leasing of wireless services in Canada in 2009. Wholesale revenues were a small fraction of retail revenues.⁶ The low penetration, high prices and lack of wholesale activity signal that Canada’s mobile wireless market may not be as competitive as it might be in other industrial countries.
55. We believe that, broadly, the current means for licensing of national and regional spectrum licences encourages wireless operators to acquire the same amount of spectrum across their serving areas, regardless of their business case, market needs, population density, or spectrum use. This practice encourages the acquisition and hoarding of unreasonable amounts of spectrum in rural areas, which is subsequently left as an unused and unproductive precious resource. The economics for a national or large regional operator makes it attractive to first deploy wireless facilities and new advanced networks in urban areas and high density corridors, and leave the rural regions as either part of their long term business plan, or never to be realized.

⁶ CRTC, *Communications Monitoring Report 2010*, p. 157.

56. While Canada has several licensees of mobile wireless spectrum, it really only has three wireless carriers with national or quasi-national presence – Rogers, Bell and TELUS. Moreover, because of the geographic structure of the Canadian market, many parts of the country, especially low-density areas, have only two or even one effective supplier of mobile wireless services. Outside of the Windsor-Quebec City corridor, only a small group of major urban areas and certain provincial border regions have three or more facilities-based providers.⁷ Most of Canada's wireless service zones are covered by only two or one facilities-based provider.
57. Given that the incumbents currently control large portions of 2500 MHz spectrum in certain regions, the Department must implement measures in the 2500 MHz auction so that the incumbents' competitors can have an opportunity to obtain spectrum.
58. Not only do the incumbents control most of the 2500 MHz spectrum, they also control 100% of the 800 MHz spectrum and 100% the PCS spectrum. Only the AWS spectrum is not under the complete control of the incumbents, and this was only because the Department implemented a set aside to facilitate market entry. Without some type of measure, the Department risks creating a situation where incumbents will once again capture all or most of the spectrum available in 2500 MHz. Since they already hold more than half of the spectrum, some type of in-auction spectrum cap is warranted. Barrett believes that an in-auction spectrum cap applied to 2500 MHz spectrum can be effective in preventing spectrum hoarding by incumbents, and thereby promoting competition in the Canadian wireless market.
59. The need to promote competition in rural areas is even more important. In section 4, Barrett discusses the particular need for measures that would apply strictly to 2500 MHz spectrum in unbundled Tier 4 rural service areas. In that regard, Barrett is recommending a rural set-aside provision, to accompany the in-auction spectrum cap that would apply to rural Canada.

⁷ CRTC, *Communication Monitoring Report 2010*, p. 161.

3-2. (a) If the Department were to implement spectrum aggregation limits (caps), should a cap apply to the 2500 MHz band? If a cap is necessary:

(i) What should be the size of the cap and should this be specific to either the paired and/or unpaired spectrum bands?

(ii) Should bidders and their affiliates or associates share the cap?

(iii) How long should the cap remain in effect?

(b) If the Department were to implement a set-aside in the 2500 MHz auction:

(i) Who should be entitled to bid in the set-aside block(s), and should the entitled bidders be restricted to bidding on the set-aside only?

(ii) How much spectrum should be set-aside and which block(s) should be set-aside?

(iii) If the set-aside were to include multiple blocks of spectrum, should these blocks be contiguous?

(iv) What restrictions should be put in place to ensure that policy objectives are met (for example, should trading of the set-aside be restricted for a given time period)?

60. The incumbents already control a large portion of 2500 MHz spectrum in certain regions. As such, Barrett recommends that the Department adopt a 2500 MHz *in-auction* spectrum cap of **30 MHz**. This in-auction spectrum cap would limit the total amount of 2500 MHz spectrum that any bidder could acquire during the auction, but would not affect their existing holdings in the 2500 MHz band or other bands.

61. An in-auction cap of 30 MHz would permit the Inukshuk partners to maintain their 2500 MHz holdings; however, it would limit any auction bidders from gaining more than 30 MHz in the 2500 MHz.

62. In Regions A and C, an in-auction spectrum cap of 30 MHz would mean that bidders could acquire 10+10 MHz of paired spectrum and 10 MHz of unpaired spectrum, where available, or up to 25 MHz of unpaired spectrum. In Region B, an in-auction spectrum cap of 30 MHz would mean that a minimum of three bidders could acquire 10+10 MHz of paired spectrum.

63. In addition to the in-auction spectrum cap, Barrett believes that unbundled **rural service areas** should be governed by a set-aside. In accordance with the Department's instructions, we describe this set-aside in more detail in Section 4.

3-3. Are there other mechanisms that should be considered in the 2500 MHz band to promote competition? If so, how should such mechanisms be applied in this band?

64. No. Barrett believes that a 30 MHz in-auction spectrum cap, combined with a rural set aside (see Section 4) will be sufficient to promote competition.

3-4. The Government of Canada has undertaken a consultation on potential changes to the foreign investment restrictions that apply to the telecommunications sector. How would the adoption of any of these proposed changes impact your responses to the questions above?

65. Barrett welcomes the Government of Canada's consultation and review of potential changes to the foreign investment restrictions. Barrett has submitted comments for this consultation process and has encouraged the federal government to implement investment rules that raise the limit on direct foreign investment from 20% to 49% and apply this limit to both telecommunications carriers and broadcasting distribution undertakings (BDUs).

66. While changes to the foreign investment restrictions could open the Canadian market and auction to more competition from a larger pool of new entrants, the changes could also strengthen incumbents' position. Moreover, the changes could do very little to promote deployment of wireless services in rural and remote areas, as the issue is not one of lack of capital or potential market entrants. As such, any changes to the foreign investment restrictions do not alter the need for specific measures to foster urban area competition and deployment of wireless services in rural and remote areas.

67. Nevertheless, changes in the foreign investment restrictions can greatly affect Canadian companies' ability to raise foreign capital to fund their acquisition of spectrum. Barrett believes that if the federal government plans to announce changes to foreign investment restrictions, it should do so at least six months prior to start of any

auction, so that all Canadian companies – small and large – will have sufficient time to actually raise foreign financing in advance of the auction.

3-5. The Department is seeking specific spectrum usage information from current commercial mobile licensees and entities interested in acquiring commercial mobile spectrum:

Do you plan to use the 2500 MHz spectrum acquired in the auction with, or on behalf of, another entity, which may participate in the auction? If yes, with which entity?

Your comments to this question will be treated as confidential provided that they are submit separately (e.g. in an appendix) and clearly marked as “Confidential.”

68. See confidential response in Appendix A.

4. Promoting Service Deployment in Rural Areas

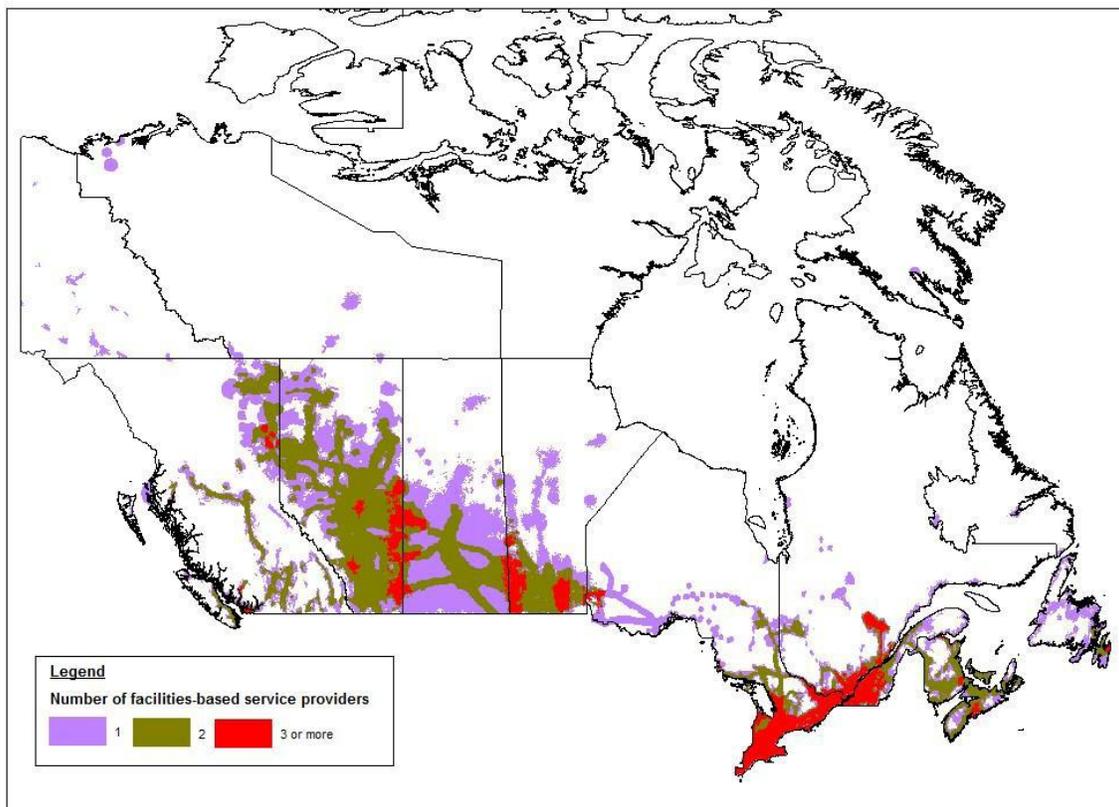
4-1. Comments are sought on specific measures that could be adopted within the 2500 MHz spectrum auction process to ensure further deployment of BRS in rural and remote areas (e.g. roll-out conditions, tier structure, etc.).

69. Barrett commends the Department for recognizing the need to consult on the specific issue of promoting service deployment in rural areas. This is a welcome step by Barrett and the large number of rural-focused service providers.

70. The Department’s initiatives to promote competition in the Canadian wireless market have led to the entry of new providers in urban markets in Canada. However, rural and remote regions in Canada still have only limited availability of affordable, robust broadband services – mobile and fixed. This lack of affordable broadband services stems in part from the lack of facilities-based competition in these areas. Data and service-coverage maps published by the CRTC show that outside of major urban areas, the vast majority of rural and remote parts of Canada have only one or, at best, two facilities-based providers of mobile communications services (Exhibit 3). There is a direct correlation between the lack of competition and the lack of accessible wireless spectrum for service offerings. With increased spectrum made available to rural-focused providers, more rural Canadians would

have the option of subscribing to carriers whose retail prices for broadband are more equivalent to services to urban Canadians.

Exhibit 3 Number of facilities-based providers of mobile communications services

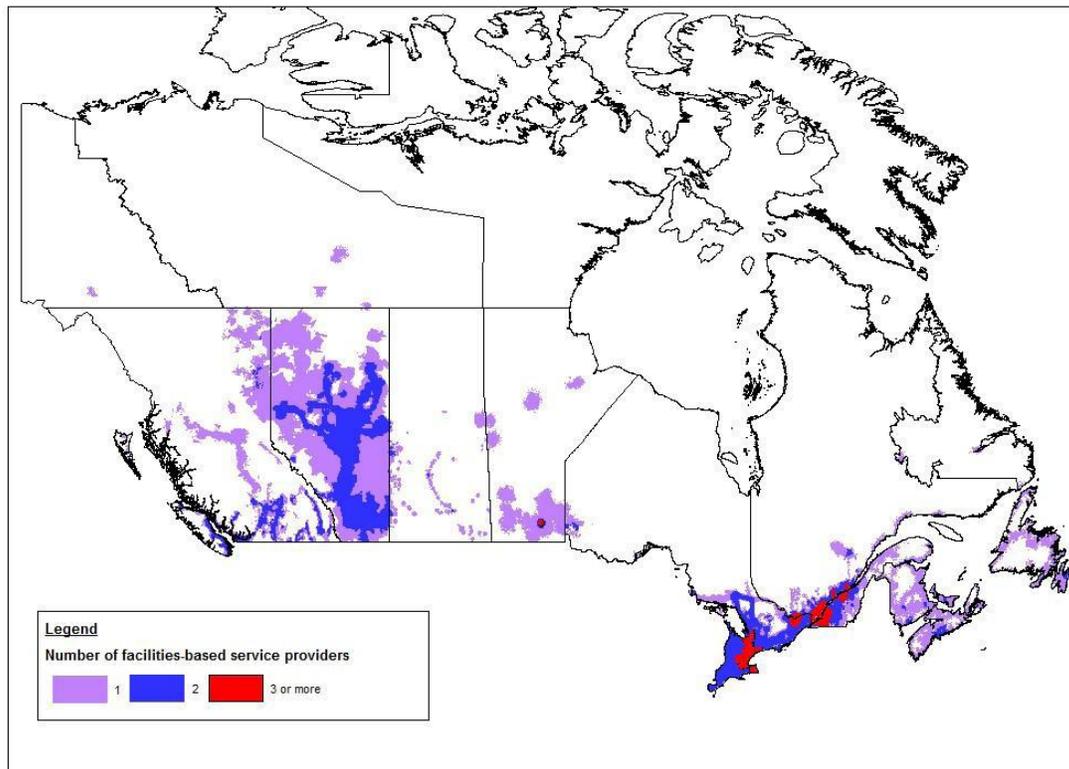


Source: CRTC, *Communications Monitoring Report 2010*, p. 161.

71. In terms of the availability of broadband 3G and 3.5G services, the situation is even worse. Large swathes of rural and remote Canada – with the exception of Alberta and the Windsor-Quebec City corridor – have only one facilities-based provider of high-speed mobile communications services (Exhibit 4). While these operators may (although they may not) eventually deploy service it tends to severely lag availability compared to urban areas.
72. While Canada’s incumbent mobile wireless providers have introduced 3.5G HSPA (high-speed packet access) to many rural areas of Canada, it should not necessarily be viewed as an affordable, robust broadband access platform, especially when compared to primary, fixed access services in urban areas, such as DSL or cable.

Within urban areas, 3.5G broadband Internet access is much more expensive than cable and ADSL alternatives.

Exhibit 4 Number of facilities-based providers of 3G and 3.5G mobile communications services



Source: CRTC, *Communications Monitoring Report 2010*, p. 162.

73. As an example, where Rogers does offer HSPA/HSPA+ mobile broadband in rural areas (i.e., a supposed broadband option for rural Canada), it is priced at **16 times** the cost of Rogers' fixed broadband services in urban areas, on a per-Gigabyte basis.⁸ Bell Canada's mobile broadband service is priced at **seven times** the cost of its fixed broadband service, on a per-Gigabyte basis.⁹
74. Clearly, HSPA-based mobile Internet access is nowhere near being an affordable substitute for fixed Internet access provided in urban areas by cable and ADSL, and in rural areas by fixed wireless technologies. The fact that Rogers, for example,

⁸ This calculation is based on a comparison of the per-GB costs of Rogers' Rocket Mobile Hotspot monthly plan (\$65 for 5 GB) to its Express High-Speed cable Internet plan (\$46.99 for 69 GB).

⁹ This calculation is based on a comparison of the per-GB costs of Bell Mobility's Turbo Hub Flex plan (\$60 for 10 GB) to its Fibe 16 fixed DSL plan (\$64.95 for 75 GB) in Ontario.

covers 88% of the population with its HSPA network¹⁰ is irrelevant, since HSPA-based mobile Internet is not as affordable an offering as a fixed, primary access solution.

75. While the Department has pointed to the deployment of broadband mobile services as a policy issue to address within the 700 MHz and 2500 MHz auctions, the real policy issue is the general lack of affordable broadband Internet access in rural Canada, whether it be mobile, fixed, nomadic or a combination. According to the CRTC, some 16% of Canadian rural households had no access to terrestrial broadband Internet services in 2009.¹¹ In some provinces and territories, the percentage was much higher. Based on Barrett's extensive operating experience, we believe the actual proportion of rural households without access to satisfactory broadband Internet services is higher.
76. Barrett commends the Department for the *Broadband Canada: Connecting Rural Canadians* program. The Department's decision to initiate the program demonstrates its continued commitment to ensuring that rural Canadians have access to broadband Internet access on par with Canadians in urban areas; and aligns to Barrett's mission of ensuring affordable, robust broadband for all Canadians. It also underlines the continued importance of addressing the digital divide. Barrett's position is that the only remaining issue to address is availability of spectrum in rural areas. It would be remiss if the Department did not use the 2500 MHz auction, as well as the 700 MHz auction, as an opportunity to swiftly and decisively address the more general issue of broadband access in rural areas.
77. In Barrett's 700 MHz consultation submission, it demonstrated that the current industry structure under which the large incumbents control the vast majority of high-propagation spectrum in rural areas has stifled the deployment of affordable broadband services in rural Canada. This industry structure has resulted, in large part, because of the manner in which this spectrum has been licensed. The bundling of

¹⁰ Rogers, "Rogers Has You Covered from Coast to Coast," downloaded at https://www.rogers.com/web/content/wireless_network> downloaded on February 25, 2011.

¹¹ CRTC, *Communications Monitoring Report 2010*, p. 137.

spectrum in rural areas with urban spectrum has raised the price of rural spectrum to a point where rural-focused ISPs such as Barrett cannot afford to acquire it.

78. Several of the parties that submitted 700 MHz comments agreed with Barrett's position that rural-focused ISPs were best placed to meet the current and future broadband needs of rural Canadians. Similarly in the 2500 MHz band, to ensure that rural-focused ISPs are able to obtain spectrum, the Department must first decouple the price of rural spectrum from urban spectrum by implementing unbundled Tier 4 service areas.
79. Barrett believes – and many parties to the 700 MHz consultation agreed – that the only way to eliminate the digital divide is to license 700 MHz and 2500 MHz spectrum on the basis of Tier 4. Indeed, Barrett argued that Tier 4 is necessary but not sufficient for addressing the digital divide.

Adoption of Tier 4 Service Areas

80. Barrett believes that tier structure ultimately has a significant bearing on the deployment of wireless services in rural and remote areas. Tiers 2 and 3 – which have been used in previous auctions of mobile spectrum – combine spectrum in urban and rural areas, and therefore prevent rural service providers from obtaining exclusively rural spectrum. Instead, wireless carriers with urban-focused businesses end up being required to obtain large swathes of rural spectrum along with their urban spectrum; irrespective as to whether they ever intend to use. Barrett believes that the issue of deployment of wireless broadband services in rural and remote parts of Canada can be most effectively addressed through the adoption of a tier structure with a higher geographic resolution than is offered by Tiers 2 or 3.
81. While there is no reason why urban-focused wireless carriers cannot lease or sell their rural service providers, to date, this has not happened to any material degree in Canada. Indeed, Barrett has, since 2007, completed five individual transactions involving the transfer of spectrum licence; however, none of these transactions was with one of the Cellular/PCS/AWS licensees. (See Appendix B). As a result, urban-

focused wireless carriers continue to forego the infrastructure needs of rural Canada.

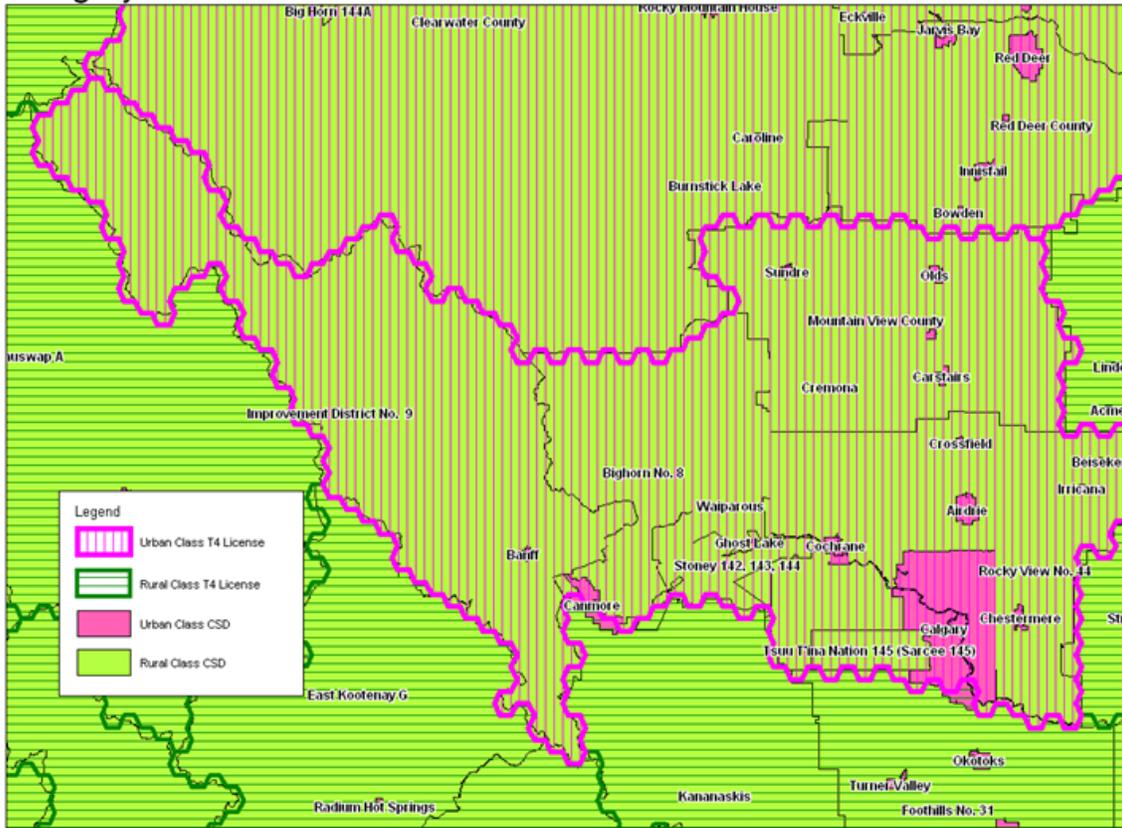
82. The application of a higher resolution tier structure, such as Tier 4, within the 2500 MHz band, would go a long way towards subdividing service areas in a manner that would give rural communications service providers a better opportunity to obtain 2500 MHz spectrum in certain rural areas, at costs more relevant to the size and population density of the market. Barrett's own analysis shows that under Tier4 125 of the 172 service areas could be classified as rural on the basis of the fact that their populations are below 100,000. These 125 rural Tier 4 service areas would attract sufficient interest from rural-focused service providers such as Barrett.

Rural Unbundling

83. While the adoption of the Tier 4 structure should attract rural service providers to 125 service areas, it still leaves large numbers of Canadians in low density areas unaccounted for in the Tier 4 service areas dominated by census metropolitan areas (CMAs) where the service area populations are 100,000 or higher.
84. Calgary is a perfect example of this shortcoming of the Tier 4 structure. The Tier 4 service area, 4-136, includes the City of Calgary and the Calgary Region; however, it also extends to as far west as Banff National Park and the British Columbia border, and as far north as Olds, Alberta (Exhibit 5). It encompasses the City of Calgary with a population density of 1,360 inhabitants per sq. km. and Mountain View County, Alberta with a population density of 3.3 inhabitants per sq. km. For a Tier 4 service area such as 4-136 Calgary, there is a need for further sub-division using Statistics Canada's census subdivisions (CSDs), which are the building blocks of the Tier 4 structure.

Exhibit 5 Household Density Profile of Calgary Service Area

Calgary T4 License 4136

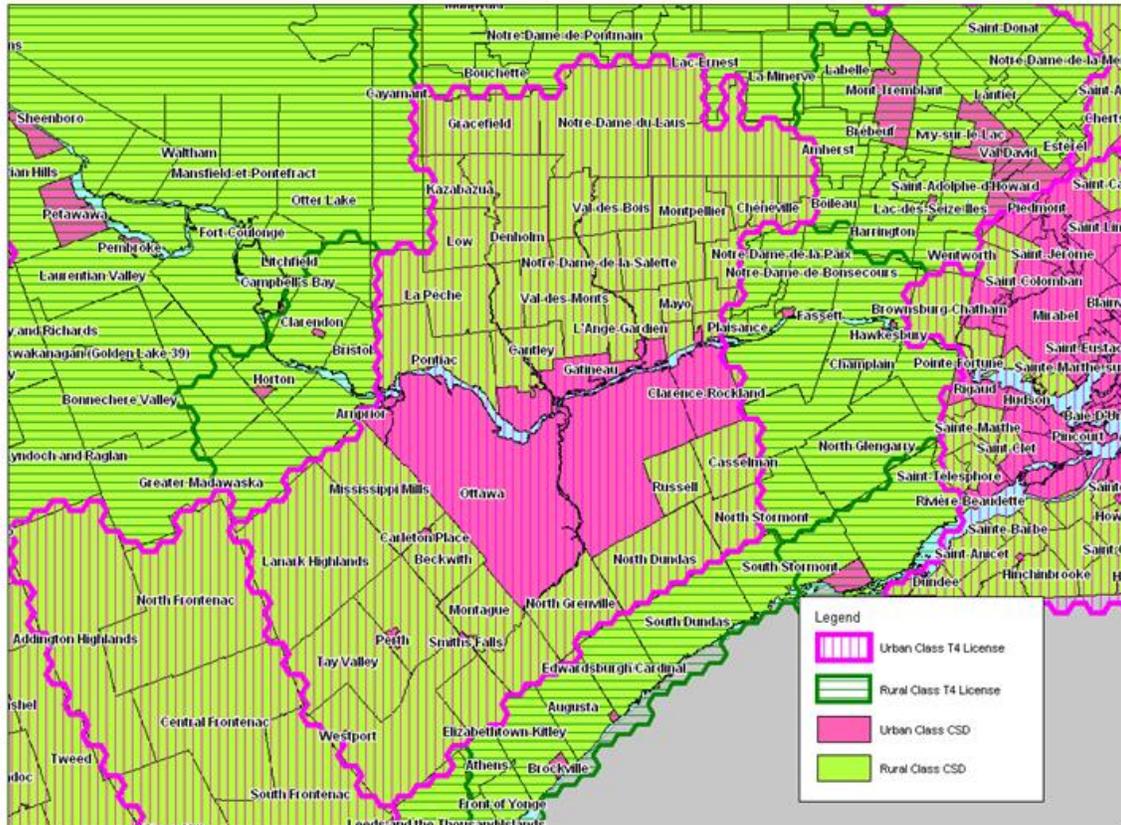


Source: Barrett

The problem of rural areas contained within urban Tier 4 service areas is not unique to Calgary; the Ottawa Tier-4 service area displays a similar household density profile, whereby the vast majority of the land area is outside the higher-density rural area (Exhibit 6). It is in this exurban area where Barrett focuses its service provision.

Exhibit 6 Household Density Profile of Ottawa Service Area

Ottawa T4 License 4055



Source: Barrett

85. As Canada's largest broadband service provider using fixed wireless broadband services to rural Canada, Barrett has found that exurban areas with a population density of fewer than 25 households per square kilometre (sq. km) also experience the very acute broadband availability issues. The Department, itself, has previously used a threshold of 25 households per sq km. to delineate urban and rural areas for the purpose of spectrum management.

For the purposes of interpreting spectrum management documents, any contiguous collection of four or more spectrum grid cells, each having a mean household density in excess of 25 households per square kilometre, shall be considered to be an urban area. An individual spectrum grid cell, with a mean household density of 25 households per square kilometre or less, that separates two collections of cells that do meet the "urban criterion", shall be considered to be part of that urban area

(Industry Canada, *Identification of Urban vs. Rural*, Radiocommunication Information Circular 27, August 2, 2000, p.1).

86. In order to attract rural-focused service providers to bid on spectrum in these exurban areas, the Department should unbundle the rural and urban sections of Tier 4 service areas with populations above 100,000 (referred hereafter as “rural unbundling”). This rural unbundling would entail separating CSDs with household densities of less than 25 households per sq. km from higher-density areas within a single Tier 4 service area. It would also entail merging the rural component of each unbundled service area with an adjacent rural area in Tier 4 another service area in order to form a larger contiguous rural service area. By implementing this latter step, the Department can keep the total number of service areas available for auction equal to the original total of 172 Tier 4 service areas.
87. Barrett recognizes that the adoption of the Tier 4 structure and any rural unbundling of service areas would arguably introduce more complexity into a Canadian auction, by multiplying the number of licences on offer. However, there is recent Canadian precedent using this tier, such as the Department’s auctions of 2300 MHz and 3500 MHz licences in 2004, 2005 and 2009.
88. Barrett believes that the adoption of a higher resolution tier structure is of vital importance to the Department’s policy goal of encouraging the deployment of advanced wireless services throughout Canada, including rural and remote areas. As such, Barrett recommends that the Department adopt the Tier 4 structure for all blocks within the 2500 MHz band.
89. To address the Tier 4 service areas where urban areas dominate but rural areas still account for large land area and significant population, the Department should implement some type of rural unbundling. The application of rural unbundling to Tier 4 would go a long way to subdividing spectrum blocks in a manner that would likely lead to lower costs of acquisition for rural service providers, without changing carriers’ overall valuations of urban spectrum.
90. Rural unbundling is the necessary additional step to unhitching the cost of rural spectrum from urban spectrum; however, it is not likely to be sufficient on its own.

Competitive Measures: Rural Set Aside

91. While rural unbundling will reduce the cost of acquiring rural spectrum, it will not necessarily prevent large operators from acquiring this spectrum. To ensure that rural-focused ISPs can indeed become owners of rural spectrum, the Department must also implement a rural set aside. This rural set aside should prohibit any current licensees of 2500 MHz spectrum in a given geographic area from acquiring unbundled rural spectrum in that same area.
92. Considering that the large incumbents control large holdings of 2500 MHz spectrum through an affiliated company, Inukshuk, this set-aside must apply to affiliated companies.
93. In the AWS auction, the Department implemented a new entrant set aside, whereby any entity (including affiliates and associated entities) with a share of 10% or more of revenues in the national wireless market was prohibited from bidding on three particular blocks of AWS spectrum. This 10% threshold excluded Rogers, Bell and TELUS from bidding on the set aside spectrum in the AWS auction. A rural set aside in the 2500 MHz band would achieve a similar result, while also ensuring that regional incumbents, which already hold large amounts of 2500 MHz spectrum in rural areas, are also unable to add to their rural spectrum holdings.
94. The duration of the set aside should be tied to targets for deployment of broadband services in rural areas. As part of this rural spectrum set aside, the Department could also impose explicit rural rollout requirements on the winning bidders of the unbundled Tier 4 spectrum, without having to burden winners of urban spectrum with the requirements. This provision could potentially raise the value of the urban spectrum.
95. The combination of a 30 MHz spectrum cap, unbundled Tier 4 service areas and a rural set-aside for non-incumbents will give rural-focused ISPs an opportunity to acquire rural spectrum at auction prices that reflect the market circumstances of these low-density rural areas.

Expanded RP-19

96. As a complementary measure to the rural unbundling and set aside already outlined in this section, the Department could also expand the scope of the existing RP-19.

97. As with the existing RP-19, an expanded RP-19 (referred hereafter as “RP-19a”) would allow third parties to submit a letter of intent to the Department requesting access to unused spectrum in rural areas through licence transfer, sub-licensing, or irrevocable long-term lease. However, unlike the existing RP-19, RP-19a would require third parties to commit to providing broadband Internet access (download speeds of 1.5Mbps or higher) to at least 50% of the population in the rural area within three years of receiving access to the spectrum. Also, whereas as RP-019 only applies to Cellular spectrum, RP-19a would apply to Cellular, PCS, AWS and BRS spectrum.

Exhibit 7 Key attributes of expanded RP-019a

Geographic coverage and type of services	<ul style="list-style-type: none">• RP-019a would apply to spectrum in rural areas and would consider broadband Internet access.• Applicable to Cellular, PCS, AWS and BRS spectrum.
Summary of procedure	<ul style="list-style-type: none">• A third party could submit a letter of intent to obtain access to spectrum where there is at least one channel or spectrum block of available (unused) spectrum in the rural CSD. This letter of intent must also confirm that unsuccessful discussions had been held between the third party and the entity that is licensed to provide service in desired location.
Holdback period	<ul style="list-style-type: none">• To permit spectrum licensees with sufficient time to rollout broadband Internet access to rural CSDs, the licensee would have a three-year holdback period in which they could holdback the spectrum from a third party. An RP-019a letter of intent could not be brought against a licensee until after it has held spectrum in a geographic area for at least three years.
Compensation	<ul style="list-style-type: none">• The Department would prepare guidelines for establishing compensation, should the parties not be able to arrive at a private transaction. For clarity guidelines would be provided prior to auction.
Imminent-use provision	<ul style="list-style-type: none">• Existing spectrum licensees that have not used the spectrum in question for over three years could not invoke the imminent use provision to prevent access to their spectrum.

Summary

98. The auction of 2500 MHz spectrum provides the Department with the ideal opportunity to make a significant positive impact on reducing the digital divide in Canada. However, it is critical that the Department and other industry stakeholders recognize that the digital divide is inherently an issue of the availability of fixed broadband services rather than mobile broadband services.
99. Furthermore, while the telecommunications industry sees 2500 MHz spectrum as largely a mobile band, the fact is that if the Department truly wants to address the digital divide it must recognize that 2500 MHz is vital to expanding the spectrum capacity of rural-focused ISP. In rural areas, spectrum is the only method for fixed broadband communications as well mobile communications.
100. Given the different role for spectrum in urban and rural areas, Barrett believes that the most effective route to addressing the digital divide is by designing an auction that allows rural-focused ISPs to acquire rural spectrum at prices that reflect rural markets and not the adjacent urban markets. To achieve this end, the Department must adopt a combination of measures and apply them to all blocks within the 2500 MHz band.
101. The adoption of Tier 4 with rural unbundling along with a 30 MHz in-auction spectrum cap and rural set aside, and rollout obligations enforced by an enhanced RP-19 will achieve the outcome of putting spectrum in the hands of the rural-focused ISPs, which are most likely to meet broadband communications needs of rural Canadians.

Exhibit 8 Summary of proposal to promote service deployment in rural areas in 2500 MHz band

Block sizes		
<ul style="list-style-type: none"> • Paired spectrum 10+10 MHz • Unpaired spectrum 10 MHz 		
Tier Size		
<ul style="list-style-type: none"> • Tier 4 service areas for all blocks within the 2500 MHz band. 		
Rural Unbundling		
<ul style="list-style-type: none"> • Tier 4 service areas are divided into rural vs. urban service areas. Any service area with a population greater than 100,000 is defined as an “urban” and any service area with population less than 100,000 is defined as a “rural.” • Rural unbundling: Urban service areas are then subdivided into urban and rural areas based on households density rates at the census subdivision (CSD) level. Any CSD with fewer than 25 households per sq. km is defined as “rural.” Then the rural CSD is redistributed to an adjacent rural service area in another Tier 4 service area in order to keep the total number of unbundled Tier 4 licences at 172. 		
Specific Measures		
Applicable to all spectrum (urban and rural service areas)	Applicable to rural service areas only	
In-Auction Spectrum Cap	Rural set-aside	Rollout requirements
<ul style="list-style-type: none"> • At the end of the auction, no winning bidder may hold more than 30 MHz of spectrum in the BRS band. • Restricted Band (RB) spectrum would not be included in calculation of spectrum cap. • The spectrum cap would be in place for an indefinite period of time. 	<ul style="list-style-type: none"> • Each entity (and its affiliates and associated entities) that holds BRS spectrum would be prohibited from bidding on rural service areas in the BRS auction. • The set-aside would remain in place until a licensee met its rural rollout requirement (see at right). Upon meeting its rural rollout requirements, a licensee would be free to transfer its BRS spectrum licence to a prohibited entity. 	<ul style="list-style-type: none"> • Winners of spectrum in rural service areas must meet commitments to make broadband Internet access available to at least 50% of the population within a Tier 4 rural service area within three years of obtaining BRS spectrum. • Bidders could meet their roll-out commitment by either (i) directly providing broadband Internet access, or (ii) providing third-party access to their rural BRS spectrum.

5. Auction Timing

- 5-1. **The Department is considering three options to proceed with the 700 MHz and 2500 MHz bands auction processes:**

Option 1: to conduct an auction for licences in the 700 MHz band first, followed by an auction for licences in the 2500 MHz band approximately one year later;

Option 2: to conduct an auction for licences in the 2500 MHz band first, followed by an auction for licences in the 700 MHz band approximately one year later;

Option 3: to conduct one combined auction for licences in both the 700 MHz and 2500 MHz bands, which would be six months later than the first auction in the case of separate auctions.

Industry Canada is seeking views on the merits or disadvantages of proceeding with each of the various options stated above. The Department seeks to understand the magnitude of interdependencies between the two bands from a business/operational perspective. Specifically, comments are sought as to the extent spectrum in these bands is interchangeable or complementary from both a technological and a strategic perspective. In addition, views on the business and financial capabilities of participating in a joint auction for both bands are sought. Comments should include the rationale for selecting one option rather than another.

102. As previously stated in Barrett's 700 MHz submission, Barrett recommends that the Department proceed with Option 3 whereby it would conduct one combined auction for licences in both the 700 MHz and 2500 MHz bands.
103. That being said, Barrett recommends that the Department consider holding sequential auctions for urban and rural service areas. Under a scenario of sequential auctions, the Department would first auction the spectrum blocks subject to urban service areas. This would be followed by an auction of the spectrum blocks, including the urban and rural portions of any rural unbundled service areas.

Appendix A & B

*** End of Document ***